

and winning manners, of scholarly habits and wide reading, of an inquiring and original turn of mind, the fruitfulness of which was subdued by chronic invalidism. When he went to Paris he took with him his herbarium, which for that time was unusually rich in plants of Lower Georgia and Florida; and we remember his remark that his botanical acquaintances there made very free use of his permission to help themselves to the duplicates. There is reason to think, accordingly, that the remains of it which went to the Philadelphia Academy of Natural Sciences will not throw all the light which might be expected upon the species of plants which were described in his published papers.

His old friends, Torrey and Wm. Cooper, named in his honor the genus which, as it proved, Rafinesque had some years earlier named *Peltandra*. And the opportunity was soon lost of commemorating his name in a plant of his own country: for Achille Richard in Paris, in 1829, bestowed the name of *Levontia* upon a genus of Madagascar *Rubiaceæ*, now of five species. Although the name of John E. LeConte is best known to fame, it ought to be recorded that his brother, Louis, was also a keen botanist and excellent observer. The writer of this notice never knew him personally, for all but the earlier years of his life were passed upon the family plantation in Georgia. His name is mentioned in the preface as one of the contributors to Torrey & Gray's *Flora of North America*; and he deserved well of science in another respect, for he was the father of the two LeContes—President and Professor—of the University of California.—A. GRAY.

### A New Walking-Fern.

(PLATE III.)

Although the variation of the common walking-fern (*Camp-tosorus rhizophyllus*) is very considerable, all the forms show a more or less auricled base. The auricles of the small forms are often so broad as to be nearly confluent with the stipe. On the other hand, I am informed by Mr. Davenport that in his herbarium are specimens with the base of the blade simply obtuse, the auricles having become quite obsolescent. But the latter is a rare occurrence, and appears to be the extreme of variation in the direction of a narrowed base. The interesting form of which an illustration is given herewith, has the striking peculiarity of an acute base without proper auricles. It was found and communicated by Mr. J. G. Haupt in Muscatine County, Iowa. It covered a few square yards, and was seen in but the one spot. The common form grew a few rods away, and by its luxuriance and large size gave prominence to the new kind.

The character of the base, together with some others, shows a considerable divergence from the typical form, and seems to indi-

cate an established variety, or at least a well marked form. Whether a good variety or not can better be told after the study of a larger number of specimens and from other localities. There is at least sufficient peculiarity to merit a careful description, and for the present, the rank of variety may be assumed.

*CAMPTOSORUS RHIZOPHYLLUS*, Link, var. *INTERMEDIUS* (n. v.). Rootstalk short, ascending, clothed with a few dark-brown scales; stipe green, with a brown base, containing a single rounded-triangular fibro-vascular bundle without accompanying sclerenchyma; fronds dimorphous, subcoriaceous, thinnish; sterile frond 2 to 4 inches long, triangular-acuminate, sometimes prolonged and rooting; base broadly wedge-shape; apex blunt; fertile frond  $\frac{1}{2}$  to 12 inches long, narrowly lanceolate, broadest close to the base, greatly attenuated and prolonged at the apex; base acute, broadly wedge-shape, never cordate; veins strongly ascending, anastomosing and forming about two series of areolæ; sori few, oblong, sometimes in pairs, or confluent at the upper part of the areolæ; indusium smooth, delicate, with a sinuous margin; spores ovoid, with broad anastomosing wings of irregular width. Sterile blade  $\frac{1}{2}$  to  $\frac{3}{4}$  inch broad near the base, fertile blade  $\frac{1}{4}$  to  $\frac{3}{4}$  inch broad.

Limestone cliffs in Eastern Iowa.

The features which distinguish this from the typical form are the single fibro-vascular bundle of the stipe without an anterior nation of sclerenchyma, thinner and narrower fronds, simpler vein-thread, acute base, shorter sori, and the greater differentiation of sterile and fertile fronds. Of these characters the most pronounced are the bundle of the stipe and the base of the blade.

It is a significant fact that the deviations from the type are all in the direction of the only other known species of the genus, *C. Sibiricus*, a native of northeastern Asia. So considerable is the approach toward that species that if our plant had been found in company with the foreign instead of the home sort, I doubt not it would have been set down as a genuine variety of the former. I have not, however, seen specimens of *C. Sibiricus*, and cannot speak with perfect confidence, but form my judgment from the extended and very complete description given in Milde's *Filices Eur. et Atlan.*, and the figure in Hooker's *2nd Century of Ferns*. Professor Eaton writes me that a specimen in his herbarium corresponds closely with Hooker's illustration except it is not so large. The opinion of Linnaeus that only one variable species of *Camptosorus* exists, may again find favor. At any rate the form under discussion is quite intermediate between the two established species. One character, however, yet to be mentioned, marks the closer affinity with *C. rhizophyllus*. It is the widening of the blade above the triangular base. By referring to the illustration, the slight lobation of the blade at the widest part is evident in every frond. These incipient lateral lobes are not auricles, but are of the nature of

the lateral prolongations occasionally produced by *C. rhizophyllus*, and well illustrated in Eaton's *Ferns of North America*. In *C. Sibiricus* both the auricles and the lateral developments are wanting, and the greatest breadth is still farther from the base of the blade. The character of the axial bundle is very marked, and should not be disregarded.—J. C. ARTHUR.

EXPLANATION OF PLATE III.—An entire plant of natural size showing four sterile fronds and a small fertile frond.

A single fertile frond of natural size with a plantlet growing from the apex.

Portion of the same frond enlarged six diameters, showing the venation and position of the sori.

Cross-section of a fertile stipe magnified thirty-five diameters, and drawn with camera lucida.

### Notes on the Virginia Creeper.

A number of years ago I communicated to the *Academy of Natural Sciences of Philadelphia* the fact that every third node had one tendril, and that the leaves opposite the tendrils had no axillary buds. About the time of the publication of my remarks I twitted in pleasant vein the author of "*How plants Behave*," with inaccuracy, because the cut at p. 17 had an axillary bud opposite to a tendril. To my amazed discomfiture he replied by sending me a fresh specimen just like his drawing! It was a good lesson to me on the use of "never" by a botanist. I have since seen such cases, but very seldom. The rule is as I then noted. In the Japan species, *Ampelopsis tricuspidata* (*A. Veitchii* of gardens), the rule is the same. Mohr, a German writer on the grape vine notes that there are regular intermissions of tendrils in the grape vine, and Dr. Engelmann since, but I believe quite independently, observed the same, and at one time believed the fact might be made of value in the diagnosis of species. Much does not seem to have been made of it however in this direction. In the grape there is not the same constancy in the numerical order as in the Virginia Creeper. In *Vitis indicisa* I find a tendril at every node. In other species of *Vitis* and *Ampelopsis*, there are irregularities.

It is worth noting how *Ampelopsis quinquefolia* varies. In 1871 and '73 I collected it in the vicinity of Pike's Peak with narrow, lacinate, and somewhat glaucous leaves. Mr. Buckley notes it in Texas as often bearing seven leaflets, where it is his *A. heptaphylla*. In Canada I find six leaflets common, with often the rudiments of a seventh. In the upper Delaware regions I have often gathered them with but three. In Pennsylvania the chief veins diverge and curve as they approach the margin. At Niagara I found them as nearly parallel and straight as in a horse chestnut. A first glance at one on Goat Island once, as it ran over a tree, gave me a pleasant surprise that I was looking at an *Aesculus*.

Some years ago a large *Ampelopsis* covered a *Cerasus scrotina*